AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1-21. (cancelled)

22. (currently amended) A method for differentiated digital processing of a sound signal, constituted in an interval of a frame by a sum of sines of fixed amplitude and of which a frequency is modulated linearly as a function of time, this sum being modulated temporally by an envelope, [[[]] a noise of said sound signal being added to said signal, prior to said sum, comprising:

a stage of analyzing making it possible to determine parameters representing said sound signal by

calculating the envelope of the signal,

calculating the sound signal of the pitch and its variation,

applying to a temporal signal of an inverse variation of the pitch a temporal sampling of the sound signal with a variable sampling step, this step varying with an inverse value of the pitch variation,

performing a Fast Fourier Transformation (FFT) of a pre-processed signal,

extracting signal frequential components and their amplitudes from a result of the Fast Fourier Transformation, and

calculating the pitch in a frequential domain and its variation with respect to the previously calculated pitch in order to improve a precision of the previously calculated pitch.

23. (previously presented) The method according to claim 22,

wherein the method further comprises a stage of synthesizing said representative parameters making it possible to reconstitute said sound signal.

24. (previously presented) The method according to claim 22,

wherein the method further comprises a stage of coding and of decoding of said representative parameters of said sound signal.

25. (previously presented) The method according to claim 22,

wherein the method further comprises a stage of filtering of the noise and a stage of generating special effects, from the analysis, without carrying out a the synthesis.

26. (previously presented) The method according to claim 22,

wherein the method further comprises a stage of generating special effects associated with a synthesis.

27. (previously presented) The method according to claim 23,

wherein said stage of synthesizing comprises:

summing of the sines of which the amplitude of the frequential components varies as a function of the envelope of the signal and of which the frequencies vary linearly,

calculating the phases as a function of the frequencies value and of the values of phases and frequencies belonging to the preceding frame,

superimposing the noise, and

applying the envelope.

28. (previously presented) The method according to claim 25,

wherein said stage of filtering of the noise and said stage of generating special effects, from the analysis, without carrying out the synthesis, comprise a sum of the original signal, of the original signal shifted by one pitch in positive value and of the original signal shifted by one pitch in negative value.

29. (previously presented)   The method according to claim 28,

wherein said shifted signals are multiplied by a same coefficient, and the original signal by a second coefficient, the sum of said first coefficient, added to itself, and of said second coefficient is equal to 1, reduced in order to retain an equivalent level of the resultant signal.

30. (previously presented)   The method according to claim 28,

wherein said stage of filtering and said stage of generating special effects, from the analysis, without carrying out the synthesis, comprise:

dividing the temporal value of the pitch by two, and

modifying the amplitudes of the original signal and of the two shifted signals.

31. (previously presented)   The method according to claim 28,

wherein said stage of filtering and said stage of generating special effects, from the analysis, without carrying out the synthesis, comprise:

multiplying each sample of the original voice by a cosine varying at the rhythm of half of the fundamental (multiplication by two of the number of frequencies), or varying

at the rhythm of one third of the fundamental (multiplication by three of the number of frequencies), and

adding the result obtained to the original voice.

32. (previously presented) The method according to claim 26,

wherein said stage of generating special effects associated with the synthesis comprises:

multiplying all the frequencies of the frequential components of the original signal, taken individually, by a coefficient, and

regenerating the moduli of the harmonics from the spectral envelope of said original signal.

33. (previously presented) The method according to claim 32,

wherein said multiplication coefficient of the frequential components is:

a coefficient dependent on the ratio between the new pitch and the real pitch, or

a coefficient varying, periodically or randomly, at low frequency.

34. (currently amended) A device for the carrying out of the method according to claim 22, comprising:

[[-]]means for analysis making it possible to determine parameters representative of said sound signal, this means for analysis comprising:

means for calculating the envelope of the signal,

means for calculating the pitch and of its variation,

means for applying the inverse variation of the pitch to the temporal signal, consisting in performing a temporal sampling of the sound signal with a variable sampling step, this step varying with the inverse value of the pitch variation,

means for the Fast Fourier Transformation (FFT) of the preprocessed signal;

means for extracting the frequential components and their amplitudes from said signal, from the result of the Fast Fourier Transformation,

means for calculating the pitch in the frequential domain and its variation with respect to the previously calculated pitch in order to improve the precision of this previously calculated pitch.

35. (previously presented)   The device according to claim 34,

further comprising at least one of:

means for synthesizing said representative parameters making it possible to reconstitute said sound signal, and/or

means for coding and of decoding said parameters representative of said sound signal,

means for filtering the noise and of generation of special effects, from the analysis, without passing through the synthesis, or

means for generating special effects associated with the synthesis.

36. (previously presented)   The device according to claim 35,

wherein said means for synthesizing comprise:

means for summing sines of which the amplitude of the frequential components varies as a function of the envelope of the signal,

means for calculating of phases as a function of the frequencies value and of the values of phases and frequencies belonging to the preceding frame,

means for superimposing noise, and

means for applying the envelope.

37. (previously presented)   The device according to claim 35,

wherein said means for filtering the noise and said means for generating special effects, from the analysis, without passing through the synthesis, comprise means for summing of the

original signal, of the original signal shifted by one pitch in positive value and of the original signal shifted by one pitch in negative value.

38. (previously presented)   The device according to claim 37,

wherein said shifted signals are multiplied by a same coefficient, and the original signal by a second coefficient, said sum of said first coefficient, added to itself, and of said second coefficient is equal to 1, reduced in order to retain an equivalent level of the resultant signal.

39. (previously presented)   The device according to claim 35,

wherein said means for filtering and said means for generating special effects, from the analysis, without passing through the synthesis, comprise:

means for dividing the temporal value of the pitch by two, and

means for modifying the amplitudes of the original signal and of the two shifted signals.

40. (previously presented)   the device according to claim 35,

wherein said means for filtering and said means for generating special effects, from the analysis, without passing through the synthesis, comprise:

means for multiplying each sample of the original voice by a cosine varying at the rhythm of half of the fundamental (multiplication by two of the number of frequencies), or varying at the rhythm of one third of the fundamental (multiplication by three of the number of frequencies), and

means for then adding the result obtained to the original voice.

41. (currently amended) the device according to claim 35,

wherein said means for generating special effects associated with the synthesis, comprise:

means for multiplying all the frequencies of the frequential components of the original signal, taken individually, by a coefficient, and

means ~~means~~ for regenerating the moduli of the harmonics from the spectral envelope of said original signal.

42. (previously presented) The device according to claim 41,

wherein said multiplication coefficient of the frequential components is:

a coefficient dependent on the ratio between the new pitch and the real pitch, or

a coefficient varying, periodically, at low frequency.